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FOREST PEST REPORTER

NEW JERSEY DEPARTMENT OF AGRICULTURE

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GYPSY MOTH SPRAYING A SUCCESS

Despite slow foliage development in the Burlington County spray blocks, the 1999 gypsy moth aerial suppression program, which began on May 10th, was completed in just four days. The 11 spray blocks (4 in Salem County and 7 in Burlington County) covered 1,394 acres in forested residential areas in six municipalities. All were treated with the non-chemical insecticide, *Bacillus thuringiensis* (B.t.).

Gypsy moth post-spray evaluation plots have been checked in all treatment blocks located in Burlington and Salem Counties. Defoliation in all spray blocks ranged from 5 to 30% in Salem County to 5 to 20% in Burlington County. Defoliation levels in the untreated infested area in Tabernacle Township, Burlington County, ranged from 80 to 100%.

Larval hatch and instar development proceeded normally. Larval counts in the treated blocks ranged from 2 to 44 in the treated areas compared to 163 in the check areas. Adult gypsy moths have emerged an initial egg mass counts average about 520/acre in areas of Oldmans Township, Salem County. In Tabernacle Township, egg mass counts average about 1,330 / acre. There was little evidence of the fungus disease *Entomophaga maimaiga* this year in the larval population, probably due to the unusually hot, dry conditions which began around the end of May. This year's aerial treatment was accomplished using one Grumman 600 Agcat spraying undiluted Foray 48B at a dose of 30 BIUs /acre (.63 gallons/acre). The Agcat was calibrated at 100 mph/100 foot swath width @ 45 psi. using 22 (8006) flat fan nozzles (11 each side). There were no multiple applications on this year's suppression program.

The aerial suppression contract with Downstown Aero Crop Service of Vineland was renewed for another year at a cost of $11.90/ acre.

GYPSY MOTH AERIAL DEFOLIATION SURVEY COMPLETED

The statewide aerial sketch mapping survey of two million forested acres for signs of gypsy moth defoliation was completed on early in July. A total of 1,380 acres of forest land were found to be defoliated in Burlington, Camden and Salem Counties where 750 acres had severe defoliation (75 to 100%), 470 acres had heavy defoliation (50 to 75%), and 160 acres had moderate defoliation (25 to 50%). The amount of acreage is down from the 1,995 acres defoliated in 1998. However, due to the lack of the fungus disease, the egg masses in infested areas are appear larger and more numerous.

The largest single area of defoliation (660 acres) was observed in the Tabernacle Township, Burlington County, which chose not to participate in the Department's cooperative suppression program last spring. Other municipalities with defoliation included Westampton Township, Burlington County, with 50 acres, Berlin and Pine Hill Boroughs, Camden County, with 90 acres, and Oldmans Township, Salem County, with 580 acres.

EASTERN PINE LOOPER/NEEDLEMINER POPULATIONS ACTIVE AGAIN THIS SUMMER

After an absence of six years the eastern pine looper dramatically re-appeared last fall, defoliating over 320,000 acres of the Pine Barrens in central and southern New Jersey. Also, appearing with the loopers in many areas was another pine pest, the pine needleminer. Although much of the damage by these pests was observed on pitch pine, any Christmas tree grower having Scotch pine or other two- or three-needled pines growing near infested pitch pine forests, should check for these pests.

The eastern pine looper, *Lambdina athasaria pellucidaria,* has one generation a year with adults moths most abundant in May. Both the males and females are strong fliers and, after mating, the females deposit eggs on the pine needles and bark. The looper caterpillars begin hatching in late May and feed on pine needles throughout the summer but the defoliation damage becomes most pronounced in September and October. The full-grown caterpillars are yellow-brown in color and, after completing seven instars, they can grow up to 11/2 inches in length. In the fall they migrate to the soil beneath the pines where they enter the pupal stage and remain until May. When small, loopers are difficult to detect. The best way to determine if trees are infested is to measure off an 18 inch section of the Scotch pine branch or other two- or three-needled pine, put a white cloth under it, and hit the branch to dislodge the caterpillars. Generally speaking, if 10 or more loopers drop from the branch sample, and the loopers are generally less than 1/2" long, *Bacillus thuringiensis* (B.t.) may be used to treat the trees. If loopers are over 1/2"long, a second application may be needed.

The pine needleminer, *Exoteleia pinifoliella,* is another pest that caused widespread damage to pitch pines last fall. Although pitch pine is its primary host, it can mine the needles of jack, red, mugho, Virginia, loblolly, and Scotch pines. Female moths deposit their eggs in recently-vacated, mined needles in the late spring. Hatching begins in mid- to late June and the young larvae vacate the old mined needle and bore into the bases of current year needles. A single larvae will mine up to three needles.

Infested needles turn brown and remain on the tree through the winter and following spring. In trees show serious browning of the needle, Rutgers Cooperative Extension recommends a spray of acephate or carbaryl in mid-June and again in late-June to control the problem.

Following last year's defoliation of over 320,000 acres of pine forests in the Pine Barrens by eastern pine loopers and the pine needleminers, a Looper/Needleminer Task Force was formed, including representatives from NJDA, the New Jersey Forest Fire Service, the New Jersey Office of Pesticides, the Cooperative Extension, and both the New Jersey and USDA Forest Services as well as representatives of Abbotts Laboratories, manufacturers of B.t., and Downstown Aero Crop Service, an aerial pesticide spraying service. The group plans to develop an action plan to deal with these devastating pests.

GYPSY MOTH SUPPRESSION PROGRAM STAFF:

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